25. A method according to claim 23 in which the end face is curved.

26. A method according to claim 20, wherein the first dielectric layer is patterned.

27. A method according to claim 20, wherein the semiconductor and first dielectric form a common integrated waveguide device.

REMARKS

Entry and consideration of this Amendment is respectfully requested.

Respectfully submitted,

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APPENDIX

VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE CLAIMS:

The claims are amended as follows:

3. A junction structure according to claim 1~~ or 2~~, wherein the dielectric layer below the further waveguide region is silicon dioxide.

4. A junction structure according to claim 2~~ or claim 3~~, wherein the substrate comprises a layer of silicon dioxide and a layer of silicon.

5. A junction structure according to any of claim~~s~~ 2~~ to 4~~, wherein the dielectric layer also extends over the light transmitting semiconductor layer.

7. A junction structure according to any of claim~~s~~ 2~~ to 6~~, wherein there is provided an anti-reflective layer over said end face.

9. A junction structure according to claim 7~~ or claim 8~~, wherein the light transmitting semiconductor layer is directly covered by a layer of silicon dioxide on the side remote from the substrate.

10. A junction structure according to ~~any of~~ claim~~s~~ 2~~ to 9~~, wherein the layer forming the further waveguide region is patterned.

11. A junction structure according to ~~any of~~ claim~~s~~ 2~~ to 10~~, wherein the waveguide regions are in the form of rib waveguides.

12. A junction structure according to ~~any of~~ claim~~s~~ 2~~ to 11~~, wherein the silicon nitride layer is of sub-micron thickness and is less than one tenth the thickness of the silicon layer.

13. A junction structure according to ~~any one of the preceding~~ claims 1 in which the said end face of the semiconductor waveguide at the junction is curved and forms a lens to direct transmitted light into the adjacent waveguide section.

14. An optical interferometer having parallel light transmitting paths, at least one of said paths including a waveguide junction structure as claimed in ~~any one of~~ claims 1 ~~to 13~~.

17. An interferometer according to claim 15 ~~or claim 16~~, wherein the or each silicon waveguide is a rib waveguide formed from a silicon-on-insulator wafer.

18. An interferometer according to ~~any of~~ claims 15 ~~to 17~~, wherein the insulating layer is silicon dioxide.

22. A method according to claim 20 ~~or 21~~, wherein the second dielectric layer and the silicon nitride layer are deposited such that they also extend over the top surface of the semiconductor waveguide.

23. A method according to ~~any of~~ claims 19 ~~to 22~~, wherein an anti-reflective coating is deposited over the end face of the semiconductor waveguide before the second dielectric layer is deposited.

25. A method according to claim 23 ~~or 24~~ in which the end face is curved.

26. A method according to ~~any of~~ claims 20 ~~to 25~~, wherein the first dielectric layer is patterned.

27. A method according to ~~any of~~ claims 20 ~~to 26~~, wherein the semiconductor and first dielectric form a common integrated waveguide device.